can be offered.

[0107] Mass storage and video-on-demand services are related in that saturation of communications lines is almost certain to occur at peak loads. The present invention overcomes both of these problems. An important principle in the network topology of the present invention is to make as much traffic as local as possible. To do this, it is necessary to utilize distributed mass storage. In other words, instead of providing massive storage at a single node, less storage is provided at a much greater number of nodes.

[0108] Consider the example of video-on-demand. This application enables a user to access a video on the Internet, and view the video as a data stream, or streaming video. Video requires large amounts of storage space, but it is no longer uncommon for a single hard drive to be to store several videos in digital format.

[0109] Figure 8 is provided as an illustration of a network topology as taught by the present invention. The figure shows sixteen network switching node devices 90, each of which is an Open IP Services Platform. Each of the network switching node devices 90 includes at least

one hard drive which is capable of storing, for example, the current top five video rentals in digital format, ready for streaming. In figure 8, two of the network switching node devices 90 are expanded to show that they are accessed by a plurality of user nodes 92. These user nodes 92 will be considered to be homes. They could also be a mixture of businesses and residential customers. Consider user one 94, user two 96 and user three 98. Each of these users desires to view video one. Video one is stored on the network switching node device 99.

[0110] The first immediate advantage of the present invention is that when each user 94, 96, 98 requests to view video one, the immediately local network switching node device 99 is able to provide this service, without having to request the service from further out on the switch fabric network matrix.

[0111] However, suppose that user two 96 wants to see video two which is an older video. Older videos are not being stored at each of the network switching node devices 90. Instead, they are being stored at just a few of the local network switching node devices because the demand is going to be smaller. Thus, network switching node device

100 might be used to store video rentals 6 through 10 for all the local network switching node devices 90. User two 96 will access network switching node device 100 by any available communication path. There are between two and four communication paths to each node 90 in figure 8.

[0112] Figure 9 shows that the switch fabric network matrix shown in figure 8 can be modified to provide more communication paths between the network switching node devices 90. For example, in an alternative embodiment, the switch fabric network matrix provides diagonal communication paths between network switching node devices 90. It is important to remember that the switch fabric network matrix is illustrative of a logical configuration. Thus, what is important is that the communication paths 114 between each of the network switching node devices 90 be a direct connection as shown.

[0113] By storing a large part of heavily demanded applications, videos, etc near the end users where it is part of local traffic to access, the switch fabric network matrix alleviates network congestion on a trunk line. And in a bandwidth intensive application such as video-on-demand, saturation is more likely a reality, and not just